Chapter 10

Work-related factors and age as determinants of three burnout dimensions among Polish hospital nurses*

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Introduction

Employment in health care and social welfare in Poland is falling systematically (Adamczyk, 2008; Kunecka, 2013) in contrast to the average age of population (GUS, 2014). It means that in Poland there are more and more old people, but the amount of specialists who will take care of them in the professional way is decreasing. It seems that an alarming situation is observed in the case of a nursing profession (Kunecka, 2013). The average age of a nurse in Poland in 2013 was about 48 years old, and only between 7% and 13.5% of them are under 30 (NIPiP, 2014; Radkiewicz, Widerszal-Bazyl, Pokorski, Pokorska, Ogińska, & Pietsch, 2004).

Why do not young people study to become nurses? Why do more and more nurses quit their job? The profession of a nurse is not an easy profession. It is associated with responsibility for safety and life of others, working shifts, many physical tasks, such as, lifting and turning patients in their bed, etc. Moreover, nurses' job is not only physically but emotionally exhausting. Every day they are in contact with people who suffer and need someone's help, not only in a physical, but also emotional sense. Some nurses meet with death and dying, which makes this profession so specific. Coping with these situations requires considerable reserves of emotional resources, and a permanent lack of these resources just means emotional exhaustion. Moreover, nurses' work may be associated with other more "universal" stress factors like a lack of job control, too much work to do, working under time pres-

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sure, etc. All these work-related factors make nursing profession very hard, demanding, and raise the risk of a burnout syndrome, which is one of the direct or indirect causes of absenteeism or taking the decision to quit the job as a nurse (Davey, Cummings, Newburn-Cook, & Lo, 2009; Jourdain & Chênevert, 2010; Radkiewicz et al., 2004; Firth & Britton, 1989; Leiter & Maslach, 2009). Moreover, professional burnout leads to many negative consequences, like depression (e.g. Hakanen, Schaufeli, & Ahola, 2008) cardiovascular diseases (Honkononen et al., 2006; Toppinen-Tanner et al., 2005), the respiratory system diseases (Toppinen-Tanner et al., 2005), musculoskeletal disorders (Honkononen et al., 2006; Grossi et al., 1999; Soares & Jablonska, 2004; Toppinen-Tanner et al., 2005), which finally can result in the overall deterioration of health care. In order to reduce or eliminate as well as counteract harmful effects of professional burnout in nursing profession, it is important to find out its reasons. Because the functioning of organizations, especially public institutions, is determined (defined) by political and economical environment, work-related causes of burnout may differ depending on country. To the best of our knowledge, there are little studies carried out in Polish hospitals measuring relation between professional burnout and work-related factors among nurses. So, our study is going to be the complement and enrichment of the knowledge about antecedents of that syndrome.

10.1. Burnout syndrome, work – related factors, and age

'Burnout' is most often defined in line of the concept of Maslach (1993) as a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment. Primarily, that phenomenon was studied among "individuals who 'do people work' of some kind," that is, nurses, physicians, social workers, teachers, etc. Currently, more and more researchers focus on other professions than human services, like managers (e.g. Montgomery Peeters, Schaufeli, & den Ouden, 2003; Hayes & Weathington, 2007), IT professionals (e.g. Maugdalya, Wallace, Daraiseh, & Salem, 2006; Sonnentag, Brodbeck, Heinbokel, & Stolte, 1994), or engineers (e.g. Yip & Rowlinson, 2009). However, because of the specific work environment and job tasks which make human services especially vulnerable to burnout, these occupations, nurses in particular, are still in the interest of researchers.

As the burnout is associated with the work domain, researchers investigating its determinants, above all, focus on the work-related factors. In agreement with some models (e.g. the Job Demands-Resources [JD-R] model by Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) or classification (Genaidy, Karwowski, Succop, Kwon, Alhemoud, & Goyal, 2000) these factors can be classified in two groups: job demands and job resources. Job demands are described as these aspects of the job which require sustained effort and are associated with physical and/or psy-

chological costs (Bakker, Demerouti, & Verbeke, 2004). Examples of job demands are work/role overload, role/job conflict, or role ambiguity. According to some researchers (e.g. Leiter, 1993; Janssen, Schaufeli, & Houkes, 1999), job demands are associated with emotional exhaustion to a larger extent than to the remaining two burnout dimensions, although results of the studies seem to be inconclusive. Some investigations confirmed the relationship between job demands and depersonalization or reduced personal accomplishment (e.g. Hochwälder, 2007; Lee, Song, Cho, Lee, & Daly, 2003; Spooner-Lane & Patton, 2007).

Job resources are regarded as extrinsic factors which individuals value and 'strive to obtain and maintain' (Hobfoll & Freedy, 1993, p. 117); or refer to those aspects of the job that help to achieve work goals, reduce job demands or stimulate personal growth and development (Bakker et al., 2004). In other words, job resources mean motivators which increase one's energy (Genaidy et al., 2000). The most studied factors among resources seem to be social support and job control, which, in turn, in line of the process model of burnout by Leiter (1993), should be more strongly related to depersonalization and personal accomplishment than to the third dimension. However, in that case the research results do not lead to explicit conclusions. Social support was regarded as a buffer against emotional exhaustion in studies by Janssen et al. (1999), Hochwälder (2007), and job control in research by Hochwälder (2007).

Another kind of group of factors, investigated in relation to a burnout, are demographic determinants, such as age, gender, and job characteristics as shift-work, or unit where nurses are employed, etc. Findings regarding relations concerning burnout and one of the demographic factors, i.e. age, are especially inconsistent. For example, in study by Koivula, Paunonen and Laippala (2000), what was observed was a higher level of burnout among older nurses than the younger ones. In addition, Bekker, Croon, and Bressers (2005) found that emotional exhaustion increased with age. In turn, Spooner-Lane and Patton (2007) and İlhan, Durukan, Taner, Maral, and Bumin (2008) found that younger nurses are more prone to emotional exhaustion compared to the older ones. A similar relationship, but with regards to depersonalization was observed by Hochwälder (2007), İlhan et al. (2008) and Spooner-Lane and Patton (2007). Moreover, İlhan et al. (2008) and Wu, Zhu, Wang, Wang, and Lan (2007) observed a decreased sense of efficacy and effectiveness in younger nurses. Although in some studies age turned out not to be a significant predictor of one or all components of a burnout syndrome (see: Hochwälder. 2007; Lee et al., 2003; Payne, 2001). Therefore, we decided to include an age factor to our investigation, in order to examine its relations with emotional exhaustion, depersonalization and reduced personal accomplishment in the sample of Polish nurses.

As the results of other studies concerning relations burnout syndrome, work-related factors, and age are inconsistent, it was decided not to hypothesize, but merely formulate the objectives of the research. So, this study had the following objectives: (1) to analyze the association between burnout dimensions and job de-

mands, work stimuli, and age; (2) to find out which of the examined factors are the most demanded and the most stimulating for the studied nurses; and (3) to determine the relation of the three burnout dimensions with age. The study was cross-sectional and data were collected with the use of two questionnaires. Descriptive statistics, one-way analysis of variance (ANOVA), correlation and multiple regression analyses were conducted.

10.2. Research methodology

Sample and procedure

Three hundred and ten nurses from four Polish hospitals were asked to complete a set of three questionnaires. Because of the missing answers, 237 sets of tests were qualified for the final analysis. All participants were women. The nurses examined work in different wards, among others: surgery (59; 24.89%), internal medicine (35; 14.76%), intensive care (32; 13.5%), or cardiology (29; 12.23%). The typical respondent was about 35–48 years of age (SD = 7.51), has been working in the present hospital for 12,07 years (SD = 8.66) and has been working in the current position for 10.21 years (SD = 8.45). The average length of employment was 13.69 years (SD = 8.39).

Measures

Work-related factors: The determinants associated with work were assessed by 4 work demands and 4 factors stimulating work. These factors were obtained as a result of a factor analysis of items of the DS-94 Work Characteristic Survey developed by Genaidy and Karwowski (2000). The detailed procedure of a factor analysis was described in the paper of Jaworek, Marek, Karwowski, Andrzejczak, and Genaidy (2010). Work demands consist of Physical Environment Requirements (12 items), Sensory and Mental Task Requirements (12 items), Workload resulting from specificity of nursing profession (15 items), and Socio-organization Environment Requirements (11 items). Work stimuli were measured by: Organizational Conditions (7 items), Economic and Individual Growth Conditions (9 items), Social/Communication Condition (12 items), and Job control (4 items). The internal consistency of all factors fluctuates between 0.78 and 0.92. Items in each factor were rated on a 6-point scale as follows: 0 = 'not applicable', 1 = 'very low/very small', 2 = 'low/small', 3 = 'moderate', 4 = 'high/large' and 5 = 'very high/ very large'.

Burnout: The burnout syndrome was assessed by the Polish version of Maslach Burnout Inventory. The scale consists of 22 items measured with three dimensions

of burnout: emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items). All items were scored using a 7-point scale from 0 = 'never' to 6 = 'every day'.

The questions about the demographic data were attached to the questionnaires. Table 1 contains medium and standard deviation and Cronbach alpha for each subscale.

Statistical analysis

Multiple linear regression analyses were used to determine the predictors of all three burnout dimensions. In order to examine differences in emotional exhaustion, depersonalization, and reduced personal accomplishment in relation to age, the analyses of variance were conducted. The most demanded and stimulating factors were selected from 82 items forming four work demands and four work stimuli on the basis of the percentage of answers belonging to 'high/large' and 'very high/very large' on the response scale.

Table 10.1 *Descriptive statistics of subscales*

	M	SD	α
Work-related factors			
Physical Environment Requirements	27.49	14.76	0.92
Workload resulting from the specificity of a nursing profession	57.83	11.6	0.87
Socio-organization Environment Requirements	23.33	12.12	0.90
Sensory and Mental Task Requirements	27.28	12.54	0.92
Organizational Conditions	25.22	5.34	0.84
Job control	8.42	5.27	0.78
Social/Communication Condition	47.75	8.52	0.90
Economic and Individual Growth Conditions	26.7	9.96	0.88
Burnout			
Emotional Exhaustion	20.92	10.97	0.88
Personal accomplishment	17.67	8.36	0.74
Depersonalization	6.16	5.65	0.72

10.3. Results

Work demands and work stimuli in the job of a nurse

The most demanded factors of the job of a nurse in examined sample, among those listed in questionnaire, belonged to the factor named Workload resulting from the specificity of a nursing profession. Above 90% of nurses reported that the low salary and current bad situation of Polish health service are extremely demanding for them. Other stressful factors, according to the examined nurses, include: lack or low bonuses, confusion and chaos in health service resulting from the bad government management, inadequate financial support of the unit or department, infectious blood-borne agents and other infectious agents, responsibility for lives and safety of others, transfer of patients in/out of bed or trolley and lifting patients on bed. Figure 10.1 shows ten most demanding work-related factors reported by the examined nurses.

In contrast, in the opinion of almost 90% of the examined nurses, working in a pleasant atmosphere and patients' satisfaction are the most stimulating factors (among those listed in the questionnaire) at their work. Other factors which motivate nurses and may enrich their energy are: family support, sense of responsibility for people's health and lives, co-workers' support, management and co-workers' praise, influencing the quality of own work, patients' feedback, sense of a nursing community, and support of the management. Figure 10.2 contains the eleven most stimulating work-related factors according to the examined nurses.

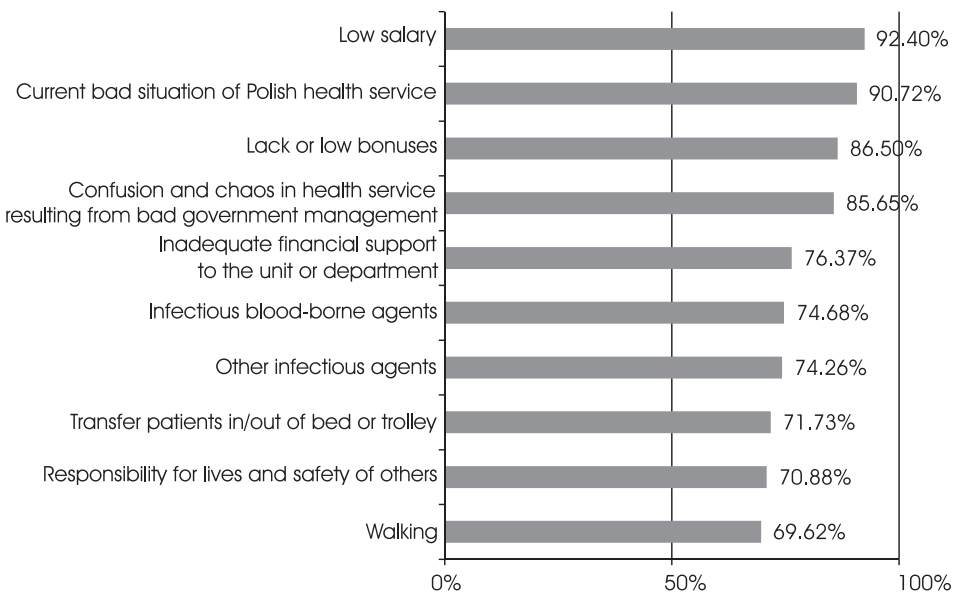

Figure 10.1. *Ten most demanding work-related factors reported by the examined nurses.*

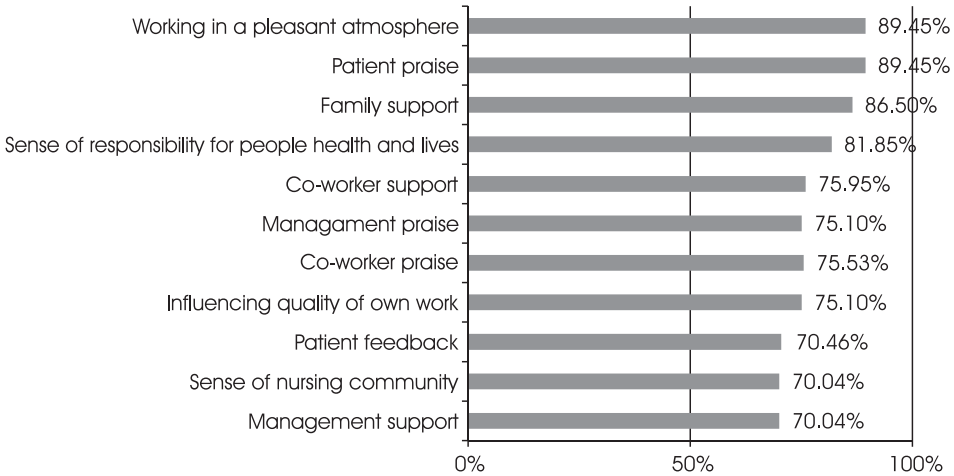

Figure 10.2. *Eleven most stimulating work-related factors reported by the examined nurses.*

Relationships between work-related factors, age, and burnout dimensions

Table 10.2 demonstrates that emotional exhaustion is the most strongly associated with Socio-organization environment requirements, Sensory and mental task requirements and Physical environment requirements, and slightly less associated with age and Workload resulting from the specificity of a nursing profession. Among the stimulating factors, only Organizational conditions are related to emotional exhaustion, although the relationship was not strong.

Depersonalization is associated with Socio-organization environment requirements, Sensory and mental task requirements, slightly less with Physical environment requirements, and Workload resulting from the specificity of a nursing profession. Social/communication conditions are negatively associated with depersonalization.

In turn, Organizational conditions, Job control, and Social/communication conditions, are negatively related to personal accomplishment. In that case none of the work demands factors turned out to be significant. Details are presented in Table 10.2.

Comparing different age groups to burnout dimensions

Age is only associated with emotional exhaustion, although to a very large extent. Comparing different age groups, it turned out that the score of emotional exhaustion increased with age, and the oldest nurses have stronger feelings of reduced personal accomplishments (see: Table 10.3).

Table 10.2 *Correlation analysis for age, burnout dimensions, and work-related factors.*

	1	2	3	4	5	6	7	8	9	10	11	12
Age	–											
Physical Environment Requirements	.10	–										
Workload resulting from specificity of nursing profession	−.04	.42**	–									
Socio-organization Environment Requirements	.06	.52**	.50**	–								
Sensory and Mental Task Requirements	−.04	.36**	.40**	.43**	–							
Organizational Conditions	.08	.09	.04	.14*	.05	–						
Job control	.13*	.10	.09	.01	.08	.42**	–					
Social/Communication Condition	.04	.01	.01	−.04	−.08	.39**	.37**	–				
Economic and Individual Growth Conditions	.07	−.09	.02	−.09	−.10	.23**	.36**	.43**	–			
Emotional Exhaustion	.20**	.32**	.25**	.36**	.35**	−.11	.04	−.11	−.16*	–		
Reduced personal accomplishment	−.13	.09	−.00	.04	.12	−.22**	−.17**	−.24**	−.10	.08	–	
Depersonalization	.11	.24**	.20**	.36**	.31**	−.01	.11	−.20**	−.02	.55**	.05	–

*$p < .05$; **$p < .01$; ***$p < .001$

Table 10.3 *Results of one-way analysis of variance (ANOVA): mean Maslach Burnout Inventory subscale for three age groups*

Age group	n	Emotional Exhaustion	Depersonalization	Reduced personal accomplishment
≤ 29	65	16.77	5.11	18.51
30–39	102	21.8	6.32	18.75
≥ 40	70	23.5	6.89	15.3
F		7.28**	1.76	4.1*

*$p < .05$; **$p < .01$; ***$p < .001$

Relations of work demands, work stimuli, age, and burnout dimensions

In order to examine whether the work-related factors, or age are significantly associated with a burnout syndrome, multiple linear regression analyses were used. The dependent variables were the three burnout dimensions (emotional exhaustion, depersonalization and personal accomplishment) and independent variables included Physical Environment Requirements, Sensory and Mental Task Requirements, Workload resulting from the specificity of a nursing profession, and Socio-organization Environment Requirements, Organizational Conditions, Economic and Individual Growth Conditions, Social/Communication Condition, Job control, and age. Each regression equation was tested in terms of normality, linearity, equality of variance and the absence of collinearity.

The results indicate that almost 25% of variance in emotional exhaustion was explained by the examined variables. The predictors of that variable were socio--organization environment requirements, sensory and mental task requirements, organizational conditions, and age. The details are present in Table 10.4.

Depersonalization is predicted by three variables: socio-organization environment requirements, job control, and organizational conditions. It is worth noting that job control, in spite of the fact that it belongs to work stimuli, increases depersonalization. This relation was explained in Discussion and conclusions section. The whole model explained 20% of variance in dependent variables. The details are presented in Table 10.5.

Table 10.4 *Summary of the multiple linear regression model in emotional exhaustion*

Predictor	B	SE	Beta	t	p
Intercept	8.70	5.54		1.57	.12
Physical Environment Requirements	.08	.06	.10	1.43	.15
Workload resulting from the specificity of a nursing profession	.05	.09	.04	.56	.57
Socio-organization Environment Requirements	.19	.07	.21	2.75	.01
Sensory and Mental Task Requirements	.18	.06	.21	3.13	.002
Organizational Conditions	−.41	.15	−.19	−2.84	.005
Job control	.22	.14	.11	1.56	.12
Social/Communication Condition	−.02	.09	−.01	−.17	.86
Economic and Individual Growth Conditions	−.12	.07	−.11	−1.69	.09
Age	.30	.09	.20	3.53	.001

Note: R^2Adj = .244; $p < .001$.

Table 10.5 *Summary of the multiple linear regression model in depersonalization*

Predictor	B	SE	Beta	t	p
Intercept	5.93	2.93		2.03	.04
Physical Environment Requirements	.01	.03	.03	.47	.64
Workload resulting from the specificity of a nursing profession	−.02	.05	−.03	−.39	.70
Socio-organization Environment Requirements	.14	.04	.28	3.66	.000
Sensory and Mental Task Requirements	.08	.03	.17	2.56	.01
Organizational Conditions	−.06	.08	−.05	−.80	.42
Job control	.18	.07	.17	2.41	.02
Social/Communication Condition	−.17	.05	−.26	−3.69	.000
Economic and Individual Growth Conditions	.05	.04	.08	1.20	.23
Age	.06	.05	.09	1.44	.15

Note: R^2Adj = .205; $p < .001$.

Only two variables appeared to be the predictors of personal accomplishment, i.e. organizational conditions and social/communication condition. Both belong to work stimuli factors, which confirms the process model of burnout by Leiter (1993). The whole model explained only 8% of variance in that dimension (see: Table 10.6).

Table 10.6 *Summary of the multiple linear regression model in personal accomplishment*

Predictor	B	SE	Beta	t	p
Intercept	33.68	4.65		7.25	.000
Physical Environment Requirements	.08	.05	.13	1.73	.09
Workload resulting from the specificity of a nursing profession	−.09	.08	−.09	−1.23	.22
Socio-organization Environment Requirements	−.005	.06	−.01	−.08	.93
Sensory and Mental Task Requirements	.07	.05	.11	1.53	.13
Organizational Conditions	−.24	.12	−.15	−2.00	.05
Job control	−.12	.12	−.07	−.99	.33
Social/Communication Condition	−.17	.07	−.17	−2.31	.02
Economic and Individual Growth Conditions	.06	.06	.08	1.03	.30
Age	−.13	.07	−.12	−1.80	.07

Note: R^2Adj = .083; p = .001.

Discussion and Conclusions

The aim of this study was to investigate which of the work-related factors together with age affect the three burnout dimensions, i.e. emotional exhaustion, depersonalization and reduced personal accomplishment among hospital nurses. Additionally, we examined which factors nurses regarded as the most demanding, and which as the most stimulating in their job.

The findings of the present study showed that the most often indicated factors by the examined nurses as demanding to high and very high degree are the factors associated with financial issues and system aspects of nurses' work as well as the specificity of that profession. An adequate salary is one of the fundamental factors of job satisfaction and, even according to Herzberg's two-factor theory of motivation (1959), salary is not a motivator, but a hygiene factor. McGrath, Reid, and Boore (2003) found that according to 52% of the examined Irish nurses increasing in salary might reduce stress, whereas in longitudinal study conducted among Thai nurses such relationships was observed (Tyson & Pongruengphant, 2004). System aspects of nurses' work concern permanent changes in health care introduced by consecutive government. Such situation may result in a sense of uncertainty among nurses about their job security and future prospects, which in turn, can be associated with psychological strain (Bordia, Hunt, Paulsen, Tourish, & DiFonzo, 2004). In addition, a stressful character of these factors may result from a lack of ability to influence them. It is rather impossible to do something alone to raise one's own salary when working in a public unit or allot funds for hospital, if it depends on the government decisions. It is also difficult to eliminate the risk factors completely, as infectious blood-borne

agents are an integral part of nurses' work. The issues regarding a sense of control will be discussed several times in the further part of that paper.

Factors which nurses perceived as stimulating mainly belonged to Social/communication conditions and, to lesser extent, Organizational Conditions. It is worth pointing out that almost the same item was found as well in a group of the most demanding work factors as in group of the most stimulating work factors. It is 'responsibility for lives and safety of others' as a work demand, and 'sense of responsibility for people's health and lives' as a work stimulus. 'Responsibility' has a dual character: on the one hand it is to be responsible for something or someone, but it is associated also with both positive and negative consequences. A sense of autonomy stimulates to act, but the awareness of negative consequences may result in mental strain. Complexity of job control was shown in Warr's Vitamin Model, in which too little and too much job autonomy might be bad for someone's mental health.

A significant factor that affects the burnout syndrome among the examined variables, but regards emotional exhaustion and depersonalization only, is Socio--organization Environment Requirements. Unfavorable atmosphere at work due to conflicts with superiors, co-workers and patients, or ambiguous and uncertain duties may result in increase in emotional exhaustion and depersonalization. It is in line with the study by Payne (2001) who also found that 'conflict with other nurses' predicted these two components of burnout, but not personal accomplishment.

In contrast, Social/communication conditions as social support from co-workers, superiors, patients and family, may protect nurses against depersonalization and reduced personal accomplishment, although this effect is rather weak. Our findings are partially in line with Leiter's Model (1993) in which supervisor and co-worker support are associated with depersonalization and personal accomplishment, but not with emotional exhaustion. Regarding relations of burnout dimensions and social support, results of other studies are inconsistent. For example, Spooner-Lane and Patton (2007) found that supervisor but not co-worker support decrease in depersonalization and personal accomplishment; Hochwälder (2007) observed that social support is a significant predictor of emotional exhaustion only, and in study by Janssen et al. (1999) co-worker and supervisor support predicted emotional exhaustion and to a small extent depersonalization. In turn, in the study by Jourdain and Chênevert (2010) support of a supervisor and colleagues, and recognition of physicians and patients were related only with depersonalization.

In our study, Organizational conditions as a capacity to influence one's own job can protect from emotional exhaustion and reduced personal accomplishment to a small extent. Job control, contrary to our predictions, slightly, but positively, appeared to be related to depersonalization. The more job control stimulates nurses to work, the more they are prone to treat patients like objects. This factor includes such items like: 'Influencing organizational policies and procedures' or 'Influencing general organizational matters – participation in important decision-making', and it is associated with a certain range of power. This effect can be explained in such

a way that who has power usually feels more confident in the scope relating to power. Nurses who have such control and are aware of their position may give themselves greater right to treat recipients in a more distant way.

Many researchers consider job control as a very important factor which can influence job satisfaction, motivation or contribute to stress. In some models, like Job-Demand-Control Model by Karasek (1979), Hackman and Oldham Model (1976) or Warr's Vitamin Model, it is assumed that poorer job control (as well as too much job control in the last model) is a factor that may lead to stress or deterioration of mental health. Some authors confirmed that relationship (e.g. Schmitz, Neumann, & Oppermann, 2000), and in examination by Finn (2001) it was found that autonomy was the most important component for nurses' job satisfaction. In our study both scales – Job control and Organizational Conditions – were associated with different kind of autonomy at work, and both had different impact on burnout dimensions. Similarly, in the study by Rafferty, Friend and Landsbergis (2001) it was found that two subscales of Work control, differentially predicted emotional exhaustion, depersonalization and reduced personnel accomplishment; only skill discretion was associated with burnout dimensions while decision authority was not.

Sensory and Mental Task Requirements turned out to be the significant predictors of emotional exhaustion and to a small extent depersonalization. It includes items, such as, 'Recalling job-related information', 'Visual activities, such as, identifying symptoms', or 'Manual activities – while performing or giving assistance at surgery, treatment'. This factor refers to activities, which performing very often and intensively, can easily leads to fatigue and feeling of workload. Just workload is recognized as a main source of emotional exhaustion (see: Leiter's model, 1993), which was confirmed by some studies (e.g. Janssen et al., 1999; Wu et al., 2007; Spooner-Lane & Patton, 2007).

In general populations, younger age was found to be related to a higher risk of burnout (Maslach, Schaufeli, & Leiter, 2001). In our study older nurses were more exhausted than their younger colleagues, which is consistent with the study by Bekker et al. (2005), but contrary to other studies (e.g. Spooner-Lane & Patton, 2007; İlhan et al., 2008). Regarding depersonalization and reduced personal accomplishment, age was not a significant predictor. Generally, results of other examinations are inconsistent, but in many of them, age was not a substantial factor contributing to burnout, regardless of the direction of that relationship.

To sum up, the strongest predictors of emotional exhaustion were socio-organization environment requirements, sensory and mental task requirements, and age. Depersonalization was mainly predicted by socio-organization environment requirements and social/communication condition. Finally, organizational conditions and social/communication condition were the only predictors of reduced personal accomplishment. Older nurses were more exhausted than youngers. The most straining factors, according to the examined nurses, were low salary and

current bad situation of Polish health service, and the most stimulating ones – working in the pleasant atmosphere and patient praise.

As the present study is limited by its cross-sectional nature, the use of self--report methods, such as, questionnaires, and the sample of nurses was not random, the findings should be interpreted with caution. To correct these weaknesses, further studies in this field are recommended, using more sophisticated tools and data collation methods.

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